REMARKS

Claims 1-10 are currently pending in this application. No claims have been amended or canceled. Claims 9 and 10 have been added. No new matter has been added. Support for the newly added claims can be found in paragraphs [0013], [0025], and [0028] of the specification.

In view of the following remarks, the pending claims are respectfully submitted to be in condition for allowance. Applicants respectfully request reconsideration and the timely allowance of the pending claims.

35 U.S.C. § 102(b) Rejection Based on Sommerfeld et al.

Claims 1-3 and 8 were rejected under 35 U.S.C. 102(e) over Sommerfeld et al., U.S. Patent No. 5,886,101, (hereinafter "Sommerfeld").

The claimed invention is a photochromic plastic object comprising a transparent synthetic resin body. The resin body is composed of at least two interpenetrating polymer networks of different polymer materials and at least one photochromic dye. The photochromic dye is homogeneously distributed throughout the resin body.

Sommerfeld teaches a material comprising at least two interpenetrating polymer networks. The networks are dispersible or soluble in common organic liquids such as alcohols and ethers (see column 11, lines 17-30 of the specification of Sommerfeld). Sommerfeld further teaches that the material can also include at least one photoactive or thermally active component (see column 13, lines 60-65). The photoactive component may include a photochromic component (see column 14, lines 13-27).

Sommerfeld fails to teach that a photochromic dye is distributed homogeneously throughout the material comprising the interpenetrating polymer networks. For this limitation, the Office Action relies on the teaching in Sommerfeld of the polymer networks being dispersible in a solvent. The Office Action then theorizes that the addition of a photochromic dye to such a dispersion would inherently result in the dye being homogeneously distributed

within the network. Sommerfeld teaches adding several components including a material comprising at least two interpenetrating polymer networks and at least one dye to a solvent (see Examples 2, 4, and 6). In each of these examples, the interpenetrating polymer networks account for about 40-50% of the solid content of the dispersion. Inorganic fillers and high molecular weight polymers account for the bulk of the remaining solid content. In the resulting dry film made by coating the dispersion and then air-drying it, the fillers and high molecular weight polymers are not colored. Thus, the dye is not homogenously distributed throughout a transparent synthetic resin body, as is claimed. Accordingly, even if a photochromic dye was substituted for the dye used in Examples 2, 4, or 6, the resultant dry film would not meet the claimed limitation of having "at least one photochromic dye homogeneously distributed therein."

Applicants further note that even if, *arguendo*, Sommerfeld did teach adding a photochromic dye to a dispersion containing only interpenetrating polymer networks and no fillers or other high molecular weight polymers to form a plastic object, such a teaching would not inherently provide the dye homogenously distributed throughout the polymer network. Specifically, the dye would be expected to distribute uniformly throughout the exposed and accessible portions of the polymer networks but would not be expected to reach the interpenetrated and intertwined regions of the networks. This is analogous to dyeing a sweater after it is woven. Such a process will never provide a homogenously dyed sweater compared to dying the individual threads or yarn before or during the weaving of the sweater. Accordingly, adding dye to a dispersion containing interpenetrating polymer networks would not provide truly homogeneous distribution of the dye.

With regards to claim 3, Sommerfeld includes no teaching of the specific interpenetrating polymer networks as claimed. Claim 3 requires that one of the networks is composed of either polyurea or polyurethane; while the other network is composed of polyacrylate, polymethacrylate, or a mixture of the two. Sommerfeld discloses that the polymer networks may include acrylates and

urethane polymers among a laundry list of possible polymers. However, Sommerfeld provides no specific teaching of the claimed polymer network combination. The Office Action relies on an illustrative polymer network shown on line 3 of column 12 of the specification of Sommerfeld. This network combination includes a polyester urethane polymer and an acrylic. The Office Action fails to provide any teaching of an equivalency between polyester urethane and the claimed polyurethane. Further, acrylics are a general list of compounds and therefore there is no specific teaching of the claimed polyacrylate or polymethacrylate. Thus, claim 3 holds additional novelty over the prior art.

Newly added claims 9 and 10 further distinguish over the prior art. Claim 9 limits the photochromic plastic object to a lens, visor, or window glazing. Claim 10 requires that the photochromic dye be distributed by a mass dyeing process. Sommerfeld fails to provide any teaching of lenses, visors, or window glazings comprising at least two interpenetrating polymer networks. Further, Sommerfeld fails to teach distributing a dye by a mass dyeing process. In a mass dyeing process, the dye is added to the polymer networks before or during polymerization. Thus, the dye will distribute homogeneously throughout the polymer networks including the intertwined and interpenetrating portions. Sommerfeld only teaches introducing a dye into a dispersion containing interpenetrating polymer networks. That is, the dye is added after the interpenetrating polymer networks have already been formed by the polymerization process. This method of dyeing would be expected to provide homogeneous distribution only in the exposed and accessible portions of the polymer networks but not in the interpenetrating and intertwined regions of the network, as described above. In contrast thereto, the photochromic plastic object dyed by introducing a dye to the polymer networks by a mass dyeing process (i.e., before or during the polymerization process in which the networks are formed), as claimed, will have a homogeneous distribution of the dye throughout and exhibit high transparency, low initial coloration, good service life, and rapid

darkening and lightening kinetics in comparison to a photochromic plastic object dyed by introducing a dye into a dispersion of already formed polymer.

As Sommerfeld fails to teach each and every limitation of the claimed invention, Sommerfeld cannot as a matter of law anticipate the claimed invention. Reconsideration and withdrawal of the rejection are therefore respectfully requested.

In view of the foregoing remarks, the application is respectfully submitted to be in condition for allowance, and prompt favorable action thereon is earnestly solicited.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned at (202) 624-2845 would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #100341.52572US).

Respectfully submitted,

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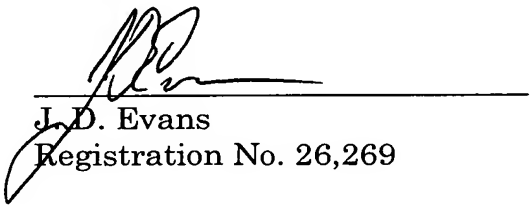

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